
PART I - ADMINISTRATIVE

Section 1. General administrative information

Title of project

Construct Warm Springs Wetland

BPA project number: 20091

Contract renewal date (mm/yyyy): ☐ **Multiple actions?**

Business name of agency, institution or organization requesting funding

Southwest Idaho Resource Conservation and Development Council, Inc.

Business acronym (if appropriate) SWID RC&D

Proposal contact person or principal investigator:

Name	<u>Bill Moore</u>
Mailing Address	<u>132 Southwest 5th Avenue</u>
City, ST Zip	<u>Meridian, ID 83642-2774</u>
Phone	<u>208-888-1890</u>
Fax	<u>208-888-1536</u>
Email address	<u>swidrcd@micron.net</u>

NPPC Program Measure Number(s) which this project addresses

7.1B, 7.1C, 8.5C, 10.1, 10.1A, 10.1E, 10.1E1, 10.2, 10.2A1, 10.2A2, 10.2B

FWS/NMFS Biological Opinion Number(s) which this project addresses

N/A

Other planning document references

Warm Springs Constructed Wetlands Design, Ada Soil Survey, Southwest Idaho Resource Conservation and Development Council, Inc. Area Plan, NRCS Environmental Evaluation, Ada Soil Conservation District 5 year Plan, Boise Parks and Recreation Long Range Plan, Lower Boise River Loading Analyses and Allocations.

Short description

Protect the water quality of the Boise River by the development of a wetland to treat urban overland flows through biofiltration and decrease sedimentation. Enhance wildlife habitat with open water and vegetation areas for cover, food and nesting.

Target species

Red Band Trout, Canada Goose, Mallard, Cinnamon and Green Wing Teal, Wood Duck, Bald Eagle, Ferruginous Hawk and a myriad of other waterfowl, nongame and migratory birds.

Section 2. Sorting and evaluation

Subbasin

Boise

Evaluation Process Sort

CBFWA caucus	Special evaluation process	ISRP project type
Mark one or more caucus	If your project fits either of these processes, mark one or both	Mark one or more categories
<input type="checkbox"/> Anadromous fish <input checked="" type="checkbox"/> Resident fish <input type="checkbox"/> Wildlife	<input type="checkbox"/> Multi-year (milestone-based evaluation) <input type="checkbox"/> Watershed project evaluation	<input type="checkbox"/> Watershed councils/model watersheds <input checked="" type="checkbox"/> Information dissemination <input type="checkbox"/> Operation & maintenance <input type="checkbox"/> New construction <input checked="" type="checkbox"/> Research & monitoring <input checked="" type="checkbox"/> Implementation & management <input type="checkbox"/> Wildlife habitat acquisitions

Section 3. Relationships to other Bonneville projects

Umbrella / sub-proposal relationships. List umbrella project first.

Project #	Project title/description
	N/A

Other dependent or critically-related projects

Project #	Project title/description	Nature of relationship
	No BPA projects have been proposed for this subbasin in fiscal year 1999.	

Section 4. Objectives, tasks and schedules

Past accomplishments

Year	Accomplishment	Met biological objectives?
1998	Environmental Evaluation	Short and long term effects are positive.
1998	Land Acquired	Critical area identified and obtained.
1998	Survey and Design	In accordance with objectives.

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Improve water quality in the Boise River by developing a large, hydrologically stable wetland that will biofilter urban stormwater runoff.	a	Project Management - Obtain contracts and agreements
		b	Project Budget - Develop working budget
		c	Project Surveying and Permitting - Obtain permit and survey information
		d	Project Design - Develop design and planting schedule.
		e	Project Construction - Construct diversion, ponds, marshes, bridges, observation areas, island, and water control structures.
		f	Planting and Seeding - Plant aquatic, upland plants and seed area.
		g	Project Maintenance - Develop plan for weed control, reseeding, pond maintenance, pond and plant rejuvenation and water quality monitoring.
2	Increase awareness of public and private land developers and the general public in the benefits of wetland development, restoration, and enhancement.	a	Interpretive Trail - Construct handicap accessible trail with interpretive signs anyone can follow on a self guided tour at any time.
		b	Presentations - Prepare presentation for the Annual Nonpoint Source Monitoring Results Workshop in

			Boise in January and other groups.
		c	Reports - Prepare annual reports to BPA, Idaho DEQ and other agencies.
		d	News Media - Prepare news releases for local news media (print, TV and radio) on the benefits of the project during and at the completion of construction and as monitoring results are obtained.
3	Increase knowledge of wetland effectiveness through collection of water quality data.	a	Water Quality Monitoring Plan - Implement monitoring plan collecting data on nutrients, oil and grease, petroleum hydrocarbons, heavy metals, sediments, PH, pathogens, pesticides and organic chemicals.
		b	Disseminate Results - Prepare reports on the benefits of the wetland to water quality using information gathered through monitoring.

Objective schedules and costs

Obj #	Start date mm/yyyy	End date mm/yyyy	Measureable biological objective(s)	Milestone	FY2000 Cost %
1	1/1998	12/1999		Wetland Constructed	91.79%
2	10/1999	1/2000		Interprative Trail	4.47%
3	9/1999	9/2000		Water Quality monitoring report - 1st year	3.74%
				Total	100.00%

Schedule constraints

Weather, contractor scheduling, and or availability of plant materials.

Completion date

2000

Section 5. Budget

FY99 project budget (BPA obligated):

FY2000 budget by line item

Item	Note	% of total	FY2000
Personnel	250 hours @ \$13.50/hr	% 7	3,400
Fringe benefits		% 0	
Supplies, materials, non-expendable property		% 0	
Operations & maintenance	Water Quality Monitoring and Weed Control	% 12	5,600
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		% 0	
NEPA costs		% 0	
Construction-related support	Inlet, Outlet, Main Pond, Settling Basin, 5 Marshes, Water Control Structures, etc.	% 67	31,690
PIT tags	# of tags:	% 0	
Travel		% 0	
Indirect costs	Overhead and administration	% 14	6,510
Subcontractor		% 0	
Subcontractor		% 0	
Other		% 0	
TOTAL BPA FY2000 BUDGET REQUEST			\$47,200

Cost sharing

Organization	Item or service provided	% total project cost (incl. BPA)	Amount (\$)
City of Boise, Idaho	1.3 Acres of Land	% 39	65,000
Bureau of Reclamation	Grant Funds authorized - Observation areas, bridges and interpretative trail.	% 6	10,000
Idaho Soil Conservation Commission	Grant Funds authorized - Contracting, Water Control Structures, Plant Materials, Labor, Outreach, Bridges.	% 6	10,000
U.S. Fish and Wildlife Service	Grant Funds authorized - Plant Materials	% 3	5,000
Ada Soil Conservation District	Grant Funds authorized - Contracting, Weed Control,	% 2	3,060

	Operation and Maintenance, Outreach.		
Idaho Department of Fish and Game	Grant Funds authorized - Marsh construction and Water Control Structures	% 1	2,000
Natural Resources Conservation Service	Technical Assistance on survey, design, plant materials, and construction.	% 13	22,500
City of Boise Parks and Recreation Department	Technical Assistance on project management, design review and maintenance.	% 1	2,200
		% 0	
Total project cost (including BPA portion)			\$166,960

Outyear costs

	FY2001	FY02	FY03	FY04
Total budget	\$0	\$0	\$0	\$0

Section 6. References

Watershed?	Reference
<input type="checkbox"/>	Lower Boise River Loading Analyses and Allocation, August 1998, Idaho Division of Environmental Quality, Total Maximum Daily Load analyses of the Boise River.
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

PART II - NARRATIVE

Section 7. Abstract

Improve the water quality in the Boise River to protect the threatened habitat of Redband trout by developing a large, hydraulically stable wetland that will bio-filter urban stormwater runoff is the primary focus of this project. The wetland will be an educational example to increase the awareness of public and private land developers and the general public in the benefits of wetland development, restoration, and enhancement. Sound scientific data on the actual operation of the wetland through collection of water quality data will increase the knowledge of wetland effectiveness in presentations and reports.

This project relates to the 1994 Columbia Basin Fish and Wildlife Program of 10.1: Resident fish goal – The program goal for resident fish emphasizes the long-term sustainability of native fish in native habitats where possible. Other related goals are 10.1E, 10.1E1, 10.2, 10.2B and 7.7 Cooperative Habitat Protection and Improvement with Private Landowners.

The wetland was planned and will be developed in partnership with Boise, BOR, US Fish and Wildlife, NRCS, Idaho Fish and Game, Idaho Soil Conservation Commission and the Ada Soil Conservation District. The expertise on planning, survey and design from these partners will continue through construction, monitoring, operation and maintenance. This wetland will be constructed in the fall of 1999. Wetland vegetation will be planted in the spring of 2000. Monitoring of the wetland effectiveness will begin in 2000 and continue for at least four years. Grab sample evaluation will be ongoing and also compared to pre wetland conditions.

Section 8. Project description

a. Technical and/or scientific background

Reductions in nutrient loading to the Boise River will be necessary to bring the Boise, Snake and Brownlee up to a condition that will support beneficial uses including sustainability of cold water biota of which the Redband Trout is a major concern.

The Boise River has four segments on the 303(d) list. The segments are located from Lucky Peak Dam to Barber Diversion, Barber Diversion to Star, Star to Notus and Notus to the Snake River. The segments have flow alteration, sediment, dissolved oxygen, oil and grease, nutrients, bacteria, and temperature listed as pollutants. Among the listed pollutants, sediment and bacteria are causing impairment and require load allocations. The Boise River is highly enriched with phosphorus, at times exhibits significant periphytic algae growth, and is a significant contributor of nutrients to the Snake River system. (Lower Boise River Loading Analyses and Allocations, DEQ, Boise 1998) The proposed Warm Springs wetland water quality project is located directly adjacent to the 303(d) listed segment of the Boise River from Barber Diversion to Star.

The Boise River flows through the city of Boise, Idaho and empties into the Snake River approximately 36 miles below town. This section of the Boise River is scheduled to receive a Total Maximum Daily Load (TMDL) allocation from the Environmental Protection Agency (EPA) in January or February 1999. The Snake River then empties into Brownlee Reservoir, which is scheduled to receive a TMDL in 2001. The lower section is water quality limited primarily due to nutrient (phosphorus and nitrogen), bacteria and sediment loading.

Urban overland runoff flows enters the Boise River throughout the greater Boise, Idaho area. These flows carry high amounts of phosphorus (orthophosphates and attached), nitrates and sediments along with other pollutants. The critical pollutants as identified in

the Lower Boise River Loading Analyses and Allocations report prepared by the Idaho Division of Environmental Quality (DEQ) Boise Regional Office, 1998, for submission to the Environmental Protection Agency (EPA) for Total Maximum Daily Load (TMDL) allocations.

Monitoring of the Boise River was limited until the Lower Boise River Water Quality Planning group was formed and began an intensive monitoring study around 1990. The USGS and the DEQ are conducting the monitoring. Data from this report shows Boise is contributing to the Boise River at West Boise 420 pounds of phosphorus (778 total pounds minus 358 pounds of background phosphorus) and 940 pounds of Total Suspended Solids (TSS) per day. The point discharge sources are very efficient in TSS and phosphorus removal in Boise, proven by monitoring done for NPDES permits. Lucky Peak reservoir is located about 10 miles above town. Water leaving the reservoir has little TSS and the aforementioned 358 pounds of phosphorus. The TSS goal of the TMDL allocations for the Lower Boise River is to have 50mg/l for no more than 60 days and 80 mg/l for a period less than 14 days throughout the year. This level of TSS is compatible with cold water biota limitations.

b. Rationale and significance to Regional Programs

The Warm Springs wetland development project will impact wildlife and resident fish habitat in three major ways. The actual construction and operation of the wetland will improve the water quality of the Boise River removing nutrients and sediment from urban overland flows prior to entering the River. This will protect the Redband Trout, Rocky Mountain Whitefish, and Brown Trout habitat in the River. Wetland wildlife habitat will provide feeding, resting and nesting areas for waterfowl (ducks and geese), other migratory birds including neo-tropical and the Bald Eagle. The area is already designated as an over-wintering area for Bald Eagles and is used occasionally by the peregrine falcon.

The wetland will be an example to local residents and land developers on wetland applicability. There are many locations that could use a wetland to collectively add to the improvement of the Boise River. The ongoing monitoring will provide data on the effectiveness of wetlands and provide added support when presenting this idea to others.

The project ties in with the 1994 Fish and Wildlife Program by supporting a number of goals. The following are some of the goals and a short narrative on how this project will support them.

7.1B: Conserve genetic diversity - by improving water quality in the Boise River to sustain native Redband Trout, Rocky Mountain Whitefish and other species.

8.5C: Law enforcement and public education - through information outreach to local and regional landowners, managers and users.

10.1: Resident fish goal – The program goal for resident fish emphasizes the long-term sustainability of native fish in native habitats where possible. Use strategies of mitigation and substitution. - Provide for long term sustainability by replicating wetland development throughout the Boise River Valley.

10.1A: Principles for resident fish management strategies (watershed management, ecosystem diversity, productivity and stability, conservation of natural diversity of resident fish stocks). - Improving water quality of the Boise River will have a long term positive effect on the management of resident fisheries of not only the Boise River but the Snake River and Brownlee Reservoir.

10.1E: Project Implementation and selection

Adaptive management principles, and appropriate monitoring and evaluation efficacy; - Department of Environmental Quality is the agency assisting with expertise in monitoring and evaluation.

Coordination with fish and wildlife agencies and tribes; - Partners include Idaho Fish and Game, US Fish and Wildlife Service

Compliance with Program policies; - Policies reviewed by partnerships will be adhered to throughout the project.

Achievement of biological results; - Water Quality monitoring results will be provided to all natural resource agencies, groups and individuals that request data.

Development of a management plan with sound biological objectives; - Management plan development is a joint effort between US Fish and Wildlife, Idaho Fish and Game, Boise City and the Natural Resources Conservation Service.

Consultation and coordination with interested parties; - Involved partners to date include the City of Boise, Bureau of Reclamation, Idaho Soil Conservation Commission, US Fish and Wildlife Service, Ada Soil Conservation District, Idaho Fish and Game, and the Natural Resources Conservation Service.

Estimated costs and a schedule for implementation and evaluation; - Budget, cost data and a schedule for implementation and evaluation have been developed in conciliation with aforementioned partners.

Fulfillment of standards of the Northwest Power Act; - Development of wetland habitat and water quality improvements.

10.1E1: Implementation of identified resident fish projects by 2006. – This project will be completed in the year 2000 and will provide monitoring data from that point on for another four years.

10.2: Production and watershed principles. – This project and spinoff replications will improve water quality throughout the watershed.

10.2A1: Address resident fish as well as anadromous fish in developing a plan for genetic diversity as called for in measure 7.1.D.1. – Maintaining habitat for the Redband Trout, Rocky Mountain Whitefish and Brown Trout (among others) with efforts to improve and protect water quality will protect the genetic diversity throughout the Columbia River Basin.

10.2A.2: Address potential impacts on resident fish, where such impacts exist, in developing basin wide guidelines to minimize genetic and ecological impacts

of hatchery fish on wild and naturally spawning species as called for in measure 7.2A.1. – Improved water quality will protect naturally spawning species potentially reducing hatchery fortification. The replication of this project will have a cumulative effect in improving the watershed.

10.2B: Comprehensive Watershed Management – Good habitat is important for resident fish, just as it is for anadromous fish. The degraded condition of resident fish habitat in the Columbia River Basin often rivals that of anadromous fish. For this reason, the program provisions noted in 7.7 (Cooperative Habitat Protection and Improvement with Private Landowners) should also apply to resident fish. – Improvement and protection of the quality of water in the Boise River, Snake River and Brownlee will benefit habit of resident fish as it would for anadromous fish if their presents were available. The impacts of replication could have an effect on anadromous fish in the lower Snake River and associated water bodies.

c. Relationships to other projects

This project is a joint effort with the City of Boise, Bureau of Reclamation (BOR), Idaho Soil Conservation Commission, U.S. Fish and Wildlife Service (USF&WS), Ada Soil Conservation District (SCD), Idaho Department of Fish and Game, Southwest Idaho Resource Conservation and Development Council, Inc., Idaho Department of Environmental Quality (DEQ) Boise Regional Office, and the Natural Resources Conservation Service (NRCS).

All partners to date have committed either in kind assistance, cash or both to the Warm Springs Wetland project. This action is due to the fact that the constructed wetland relates to all agencies desire for cleaning up the Boise River. The TMDL requirements of the Boise River and those of Brownlee Reservoir will effect the entire valley. Natural resource agencies are actively involved in the development of potential actions that will enable a proactive approach to water quality. There are however, no specific projects that will relate to this one. Conversely this project will set the standard for what can be done at the local level to provide positive impacts to water quality and wildlife habitat in urban and suburban areas.

These agencies have all collaborated on various aspects of the Warm Springs Wetland project. The expertise from the agencies has been used in planning, designing and acquisition efforts to date. Biological assistance has been provided from USF&WS, Idaho Fish and Game and the NRCS. Technical construction and operation assistance from the NRCS, Ada Soil Conservation District, Bureau of Reclamation, and the City of Boise has been used to develop design, operation and maintenance plans. The Ada SCD is responsible for information outreach with assistance from the Soil Conservation Commission on methods and programmatic operations. The operation, maintenance and water quality monitoring plans have been part of collaboration efforts with the City of Boise, BOR, USF&WS, Ada SCD, Idaho Fish and Game, DEQ and the NRCS.

d. Project history (for ongoing projects)

This is a new project proposed for development in 1999.

e. Proposal objectives

- 1. Improve water quality in the Boise River by developing a large, hydrologically stable wetland that will biofilter urban stormwater runoff.**
 - a. Project Management – Obtain contracts and agreements – Boise City is responsible for needed contracts and agreements.
 - b. Develop a working budget – This has been done with collaboration of all stakeholders.
 - c. Surveying and Permitting – Permits obtained and design survey completed.
 - d. Design – The design has been completed and a planting plan developed by the Ada Soil Conservation District and the NRCS.
 - e. Project Construction – Construct diversion, ponds, marshes, bridges, observation areas, island and water control structures.
 - f. Planting and seeding of aquatic, upland plants and seed other areas.
 - g. Develop a plan for weed control, reseeding, pond maintenance, plant rejuvenation and water quality monitoring.
- 2. Increase awareness of public and private land developers and the general public in the benefits of wetland development, restoration, and enhancement.**
 - a. Construct a handicap accessible trail with interpretive signs anyone can follow on a self-guided tour at any time.
 - b. Prepare presentation for the Annual Non-point Source Monitoring Results Workshop in Boise, Idaho in January.
 - c. Prepare annual reports to BPA, Idaho DEQ and other agencies on the effects of the wetland on water quality and wildlife habitat.
 - d. Prepare news releases for local news media (newspapers, newsletters, TV and radio) on the benefits of the project during and at the completion of construction and as monitoring results are obtained.
- 3. Increase knowledge of wetland effectiveness through the collection of water quality and wildlife data.**
 - a. Implement the water quality monitoring plan by collecting data on nutrients, oil and grease, petroleum hydrocarbons, heavy metals, sediments, pH, pathogens, pesticides and organic chemicals.
 - b. Disseminate results of the monitoring by preparing reports on the benefits of the wetland to water quality using information gathered through monitoring.

f. Methods

Objective #1 – Improve water quality in the Boise River by developing a large, hydrologically stable wetland that will biofilter urban stormwater runoff.

Robert W. Layer completed the design for the passive treatment wetland, an Earth Team volunteer with the Ada Soil Conservation District using Civil Engineering Technology. Robert is a retired engineer with many years' experience in urban stormwater runoff in Illinois. The project consists of a settling basin pond to settle out sediments, and a series of 5 marshes that will have vegetation planted to uptake nutrients. In addition to the wetland plants other hydrophytic vegetation will be planted near the water shore. The area will also have upland areas planted to grass and water loving trees and shrubs. The area will have a handicap accessible trail and observation areas marked with interpretive signs.

The construction of the wetland will be done in 1999 at a time there is little chance to get a high flow of water. The area will be protected from erosion so that sedimentation will not occur in the Boise River during construction. All earth moving equipment will disturb only areas identified. Seeding and planting of other vegetation will be done in the spring of 2000. This will provide ultimate stabilization to the area.

The on-site inventory and environmental assessment did not detect the presence of any listed endangered or threatened nor candidate animal species. The Bald Eagle inhabits the riparian areas along the Boise River near the project site and the Peregrine Falcon occasionally uses the area as well. This project does not remove any tree species that could offer habitat for eagles or falcons. The project will not disturb any pristine habitat. Upland and aquatic habitat of the wetland area, once established, will create essential cover and food for the raptor species, waterfowl, other birds, invertebrates, and mammals. From the on-site inventory and the Conservation Data Center database, no negative impacts will be inflicted on any listed or proposed endangered, threatened or candidate species identified in Idaho.

Objective #2 – Increase awareness of public and private land developers and the general public in the benefits of wetland development, restoration, and enhancement.

The success of this project will be based on the effectiveness of the wetland in the short run and the number of replicated projects that are done as a result of this example will be the long term success. The ten partners in this project would like to continue the efforts to refurbish and create wetlands throughout the Boise River valley. They will continue to promote and lead cooperative efforts for refurbishing wetlands for stormwater treatment and planning for land use. Efforts to work with land managers or developers such as the planning and zoning boards are growing in their awareness and commitment to conduct

informed planning. Information outreach from this project will continue this effort through all forms of media. The Ada Soil Conservation District will conduct public information meetings on the construction and operation. It will be the focus of at least one annual tour per year for the next two years and several smaller informational tours.

Objective #3 – Increase knowledge of wetland effectiveness through collection of water quality data.

The outreach efforts will be strengthened by the results obtained through water quality monitoring. A monitoring plan will be developed in consultation with qualified experts from the NRCS, DEQ, U.S. F&W Service, Idaho F&G, and the City of Boise. It is presently assumed that samples will be “grabbed” to provide information on the incoming water, outlet water and at various locations throughout the wetland cells. This will provide a picture of the overall effectiveness of the system as well as what is going on in each cell. The Boise River is being intensively monitored for total suspended sediments and nutrients as part of the documentation for developing a Total Maximum Daily Load (TMDL) requirement. This data will be used in conjunction with the data collected from the Warm Springs Wetland project to evaluate effectiveness.

g. Facilities and equipment

The Natural Resources Conservation Service (NRCS) technical representatives in consultation with the project engineer will perform surveying and staking of the design. The same will oversee all construction activities for safety and compliance to any contract and the design.

Construction will be done by qualified earth moving contractors. Equipment used to move soil will include, but are not limited to, scrapers, dozers, loaders, backhoes, and motor graders. The contractor will supply this equipment and the operators.

Planting of trees, shrubs and other vegetation will be supervised by technical experts from the NRCS and Ada Soil Conservation District. The NRCS plant material specialist will assist with selection and planting methods to meet the needs of the wetland and the City of Boise, U.S. Fish and Wildlife Service and Idaho Fish and Game.

All transportation to and from the site will be provided by the respective agency needing to be on site. Each agency will agree to a schedule to meet their needs and the needs of the project.

h. Budget

Personnel that are required for the project are those needed to conduct the planting of all vegetation. It is estimated, from a similar project, that approximately 400 hours of

assistance is needed to plant the area. This will include water plants, riparian plants, seeding the grass, and planting the trees and shrubs. The Idaho Soil Conservation Commission will fund 150 of the 400 hours leaving 250 hours or \$3,400 to be funded by the Bonneville Power Administration (BPA).

Water quality monitoring and weed control is figured into the operation and maintenance of the project. Weed control figures from the Ada County Weed Control Authority for spraying will cost approximately \$900 and mechanical control will be another \$300. The Ada Soil conservation district has agreed to cover \$600 of the weed control cost leaving \$600 to be covered by BPA. The water quality monitoring plan is expected to cost \$5000. This will cover the cost of taking samples, having those samples analyzed and assembling the data into a usable format throughout the year.

Construction and related support include the actual construction of the inlet, outlet, main pond, settling basin, 5 marshes, supplemental water line for winter water, handicap trail, aerator, bridges, and water control structures. The total cost of this part of the project is projected to be \$48,490 of which \$16,800 is being funded through other local partnerships leaving \$31,690 to be funded by BPA. Partners sharing the cost of these items include the Bureau of Reclamation, Soil Conservation Commission, and Idaho Fish and Game.

Indirect costs of \$6,510 will cover the costs of the Ada Soil Conservation District Board and the Southwest Idaho Resource Conservation and Development Council, Inc. to provide the needed support of office, travel, telephone, supplies, bookkeeping, auditing and other general costs of operation. This cost was developed in consultation with our accountant to supply support over a year time to this project.

The following items are listed under the cost sharing portion of the budget and not part of the aforementioned budget items.

The City of Boise, Idaho, provided the 1.3 acre land area at an appraised value of \$65,000.

The Natural Resources Conservation Service (NRCS) committed resources to survey, review design, provide construction inspection, and overall construction management and oversight for an in kind contribution of \$17,600. This will provide approximately 600 total hours of assistance from various disciplines.

The Idaho Soil Conservation Commission, Ada Soil Conservation District, and Boise Parks and Recreation together provided \$3,260 in kind and hard cash assistance toward contracting, project management and design review.

The Bureau of Reclamation provided \$10,000 for the construction of 3 observation areas, 3 bridges, and part of the interpretative trail.

The NRCS plant materials center is contributing riparian plant materials valued at \$4,900. The Idaho Soil Conservation Commission and the U.S. Fish and Wildlife Service are

committed to an additional \$6,500 to purchase other wetland plants, trees, shrubs and grass seed.

The Ada Soil Conservation District is committed to \$1,500 toward the operation and maintenance of the wetland and \$400 toward information outreach. The Idaho Soil Conservation Commission budgeted \$1,000 to complete the information outreach plan.

Section 9. Key personnel

Project Manager: William “Skip” Vetten, District Conservationist
USDA Natural Resources Conservation Service
132 Southwest 5th Avenue
Meridian, Idaho 83642-2774
Phone: (208) 888-1890 Ext. 112
Fax: (208) 888-1536
E-mail: William.Vetten@idmeridian.fsc.usda.gov

Duties and Availability for Project: Develop conceptual plans, initiate contacts with proper partners, negotiate alternatives and formal agreements. Provide leadership in planning, funding, design oversight, and public outreach. Provide technical leadership in all vegetative plantings (grass, shrubs, trees and wetland / riparian vegetation), in contracting and certification of project construction and water quality monitoring. About 500 FTE hours is the anticipated minimum for this project.

Degrees: BS in Forestry – University of Montana 1978
Double Major: Range & Wildlife Habitat Management and Plant Ecology

Current Responsibilities: Management of natural resources on private land for Ada County, Idaho. Administration and delivery of all NRCS (Federal) conservation programs to Ada County landowners.

Previous employment: USDA Forest Service
Montana Fish and Game Department
USDA Agricultural Stabilization and Conservation Service

Expertise: Plant Ecology, plant / soil relationships, riparian assessment and management, wetland delineation, wetland development, wetland mitigation, riparian restoration, wetland habitat development, wildlife habitat development.

Recent Accomplishments:

1. Developed a color handbook for conservation guidelines directed toward small farms and/or “ranchette” owners.
2. Initiated, planned, found funding, assisted in design and completed the Five Mile / Victory Enhanced Wetland Project – RE: Constructed a wetland marsh system planted to emergent wetland vegetation for the purpose of providing water quality treatment to stormwater runoff from urban areas.

3. Provided leadership and project management for watershed rehabilitation following a 15,000 acre wildfire in the foothills that drain into the City of Boise, Idaho. Installed hundreds of small check dams, sediment basins, infiltration trenches, 6 large debris basins for flood protection and seeding on 1800 acres. Implementation required: mitigating about 8 acres of lost wetlands, restoration of approximately 6,800 feet of riparian habitat, Threatened and Endangered species protection and avoidance of 4 highly valuable cultural resource sites.
4. Provided consultation for a constructed wetland project at the Boise City Zoo.
5. Provided planning and implementation leadership for a salmon habitat recovery project including riparian restoration plans and created in-stream habitat for anadromous fish.

Project Engineer: Robert W. Layer, Retired Civil Engineer, Earth Team Volunteer
 USDA Natural Resources Conservation Service
 Ada Soil Conservation District
 Urban Stormwater Management, Erosion and Sediment Control
 132 Southwest 5th Avenue
 Meridian, Idaho 83642-2774
 Phone: (208) 888-1890 Ext. 111
 Fax: (208) 888-1536

Duties and Availability for Project: Project duties are to provide leadership in survey, design, design review, and construction. Provide assistance in construction inspection. About 700 FTE hours is the anticipated minimum time commitment needed for this project.

Education: BS Mathematics and Physics – University of Illinois 1938
 BS Architectural Engineering - University of Illinois 1948
 Graduate Work: Hydrogeology - University of Illinois
 Geology (Special Topics) - Boise State University
 Geo-morphology – Boise State University
 Continuing Ed: Water Supply, Groundwater, Soils, Stormwater Management, Sewerage Design, Flood Routing, Stormwater Detention, and Erosion Control
 Remote Sensing: University of Wisconsin, University of Michigan, Cornell University, and University of Minnesota

Employment: Presently Retired
 Past Registration: Structural Engineer (Illinois), Architect (Illinois)
 Past Employment: Staff Engineer, McHenry County, Illinois,
 Department of Planning and Development,
 Chairman of the Plat Committee and Administrator
 of Stormwater Management and Erosion Control.
 Layer Engineering: Private Practice in general Civil Engineering

Recent Activity:
 Papers published:
 1. Likely Presence of Hardpan in the Boise, Idaho Area.

2. Limitations to Stormwater Management in Hardpan Areas in the Boise, Idaho Area.
3. Soil Characteristics and Stormwater Management for Water Quality.

Project activity:

1. Design and construction supervision of Five Mile – Victory Constructed Wetland. A Stormwater water quality wetland enhancement facility in Ada County, Idaho, 1997.
2. Preliminary design of proposed Warm Springs Stormwater water quality wetlands and pond demonstration and education facility.
3. Preliminary design of stage 2 features of water quality improvement for Zoo Boise ponds, 1998.

Section 10. Information/technology transfer

The information gathered during this project will be disseminated in many forms including the news media, presentations to groups and individuals, and to agencies.

The Ada Soil Conservation District will present the technical monitoring information to the Annual Non-point Source monitoring Results Workshop held in Boise, Idaho in January. This information will also be presented by written report to the Bonneville Power Administration, Idaho Department of Environmental Quality, Bureau of Reclamation, US Fish and Wildlife Service and Idaho Fish and Game. In addition to a written report, presentations will be given to Idaho Association of Soil Conservation Districts at their annual and division meetings, Idaho Soil Conservation Commission, Boise City Parks Department and the Natural Resources Conservation Service.

Presentations will also be given to groups, organizations and individuals to increase awareness of the effectiveness of wetlands in treating stormwater flows. Information outreach will encourage area land managers, owners, and / or developers to consider replicating this project on lands within their control.

The wildlife habitat information will be distributed to the various wildlife agencies and to the general public through news media and local newsletters. News releases will be presented to the local papers, TV and radio stations. Quarterly updates on the project will be featured in the Ada Soil Conservation District newsletter.

The aforementioned are the planned technology transfer methods. The Ada Soil Conservation District will be available to present technical and non-technical information on request to local, regional or other interested parties.

Congratulations!